

Date: Monday, 23/02/2009 10:12:04 AM
 User: Julie Dawson

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : FWD TUBE ASSEMBLY
Job Number : 45951	
Estimate Number : 10467	
P.O. Number :	Part Number : D3391021
This Issue : 23/02/2009 S.O. No. :	Drawing Number : D3391 REV H
Prsht Rev. : NC	Project Number : N/A
First Issue : / / Type : SKIDTUBES	Drawing Revision : H
Previous Run : 45950	Material :
Written By :	Due Date : 10/03/2009 Qty: 1 Um: Each
Checked & Approved By : <u>JLD 09.02.23</u>	
Comment :	
Est. A 05.09.13 New issue KJ/JLM	
Est. B 06.02.10 Dwg rev.D ecn 773 EC	
Est. C 06.05.02 Added inspections EC	
est D 07.03.13 rev F dwg EC	
est E 07.11.07 revG dwg ecn1053P EC verified by: DD	
Est Rev:f ECN 1056 07-11-12 DD verified by: EC	
Est Rev:G 08-09-08 new process (ecn 08-510) DD verified by:EC	
Est Rev:H 08-09-10 revH as per dwg DD verified by:EC	
Est Rev J 09.02.02 added hardware EC verified by: DD	

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

1.0	D6013047	Skidtube Material
-----	----------	-------------------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

SKIDTUBE MAT'L

Pick:

Qty	Part Number	Description	Batch
1	D6013-047	Extrusion	B26547 DP 9-2-23

2.0	SKIDTUBES 1	SKIDTUBESS RESOURCE 1
-----	-------------	-----------------------

**Comment:** LANDING GEAR RESOURCE 1

Cut extrusion to 46.52 +0.010 -0.020

DP 9-2-23

3.0	BENDING	BENDING MACHINE - SKIDTUBES
-----	---------	-----------------------------

**Comment:** Nc bender

Bend as per Dwg D3391 Using Bend Prog 3391021

DP 9-2-24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 23/02/2009 10:12:04 AM
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Drawing Name: FWD TUBE ASSEMBLY

Job Number: 45951

Part Number: D3391021

Job Number:



Seq. #:

Machine Or Operation:

Description :

4.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

509/02/24 (X)

5.0

HAAS1

HAAS CNC VERTICAL MACHINING #1



Comment: HAAS CNC VERTICAL MACHINING #1

1-Machine as per Folio FA590 Rev. F & Dwg D3391 Rev. H
Identify as D3391-1

2-Deburr

M.A

09/02/29

6.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

M.A

09/02/29

7.0

MILLING CONV.

CONVENTIONAL MILLING MACHINE



Comment: CONVENTIONAL MILLING MACHINE

Drill X1 Aft cap as per Dwg D3391 .1875" dia

SA

09/03/03

(1)

8.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

SA

09/03/03

(1)

9.0

QC8

SECOND CHECK



Comment: SECOND CHECK

509/03/02 (X)

10.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Drill float bag holes as per Dwg D3391 using DT8798(Do not open tow cap holes to finish size)
(ONLY DRILL HOLES MARKED "A")

2-Drill Remaining two holes for tow cap using DT 8819 Locating off of .1875" holes drilled in previous step

3-Open tow cap holes to .208" as per Dwg D3391

4-Open Tow Ring hole to .640" as per Dwg D3391

5- open float bag holes 0.328" and counter sink as per dwg D3391

AWM 9-3-4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Job Number: 45951

Part Number: D3391021

Job Number:



Seq. #:

Machine Or Operation:

Description :

6-Deburr & Scribe Batch number Inside aft end.

- AWM 9-3-4

7-Transfer drill D3391-021 with D3391-023

M 9-3-6

11.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S 0263/06 (40)

12.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Acid etch and Alodine as per QSI 005 4.1

D m 9-3-9

13.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

BE 9-3-9

14.0

D36704200

SPACER



Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)

SPACER

batch:

B 41863

(4)

M 9-3-9

15.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-instal spacers as per dwg D3391

A/R Magnabond 6398 batch:

M 109900

M 9-3-9

exp. date:

9-9-19

cure time 12hrs. as per QSI015

2- grind crossbolt flush

) M 9-3-6

3-back drill crossbolt if necessary

16.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

10903-11 (1)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Job Number: 45951

Part Number: D3391021

Job Number:



Seq. #:

Machine Or Operation:

Description :

17.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

Pressure wash uno/BK

09/03/12

M110939

START TIME:

15:25

OVEN TEMPERATURE:

320°

FINISH TIME:

15:35

BK

09-03-12

Q.

18.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

09-03-18

(X)

19.0

D3401041

Tow Cap Assembly



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Tow Cap Assembly

B41931

Y1

20.0

D356413

Wearshoe



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Wearshoe

B415409

Y1

21.0

D356613

Gasket



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Gasket

B45717

Y1

22.0

D36721

Phenolic Washer



Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)

Phenolic Washer

B39275

Y1

23.0

AN3C4A

BOLT



Comment: Qty.: 10.0000 Each(s)/Unit Total: 10.0000 Each(s)

BOLT

M110985

Y1

09-03-18

etc

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Drawing Name: FWD TUBE ASSEMBLY

Job Number: 45951

Part Number: D3391021

Job Number:



Seq. #:

Machine Or Operation:

Description :

24.0

AN960C10L

washer



Comment: Qty.: 10.0000 Each(s)/Unit Total: 10.0000 Each(s)
washer M 110715 911

25.0

AELS1032130

INSERT



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)
X INSERT M 108606 210

26.0

AELS1032225

INSERT



Comment: Qty.: 10.0000 Each(s)/Unit Total: 10.0000 Each(s)
X INSERT M 119393 919 09-03-18 (X1)

27.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1
Identify and Stock
Location: _____

28.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: SKIDTUBESS RESOURCE 1

**** install D3591-1 spacer as per DSI9364 ****

29.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



24A QCS inspect work to current step
8 or 13/24

09-03-25

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order: W5951
Description: Float Skidtube (412)		Part Number: D3391-1
Inspection Dwg: D3391	Rev: 0/H	Page 1 of 1

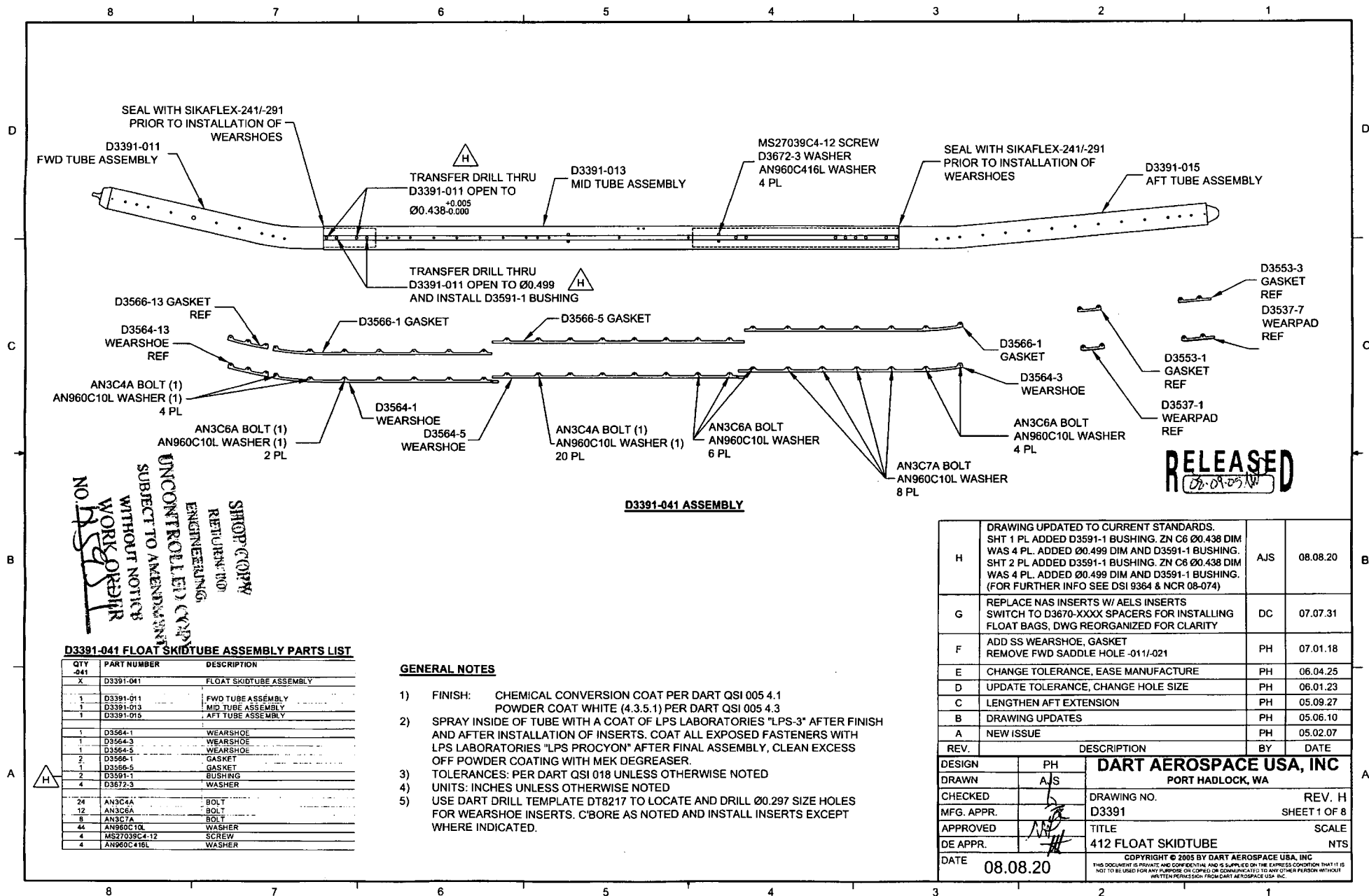
FIRST ARTICLE INSPECTION CHECKLIST

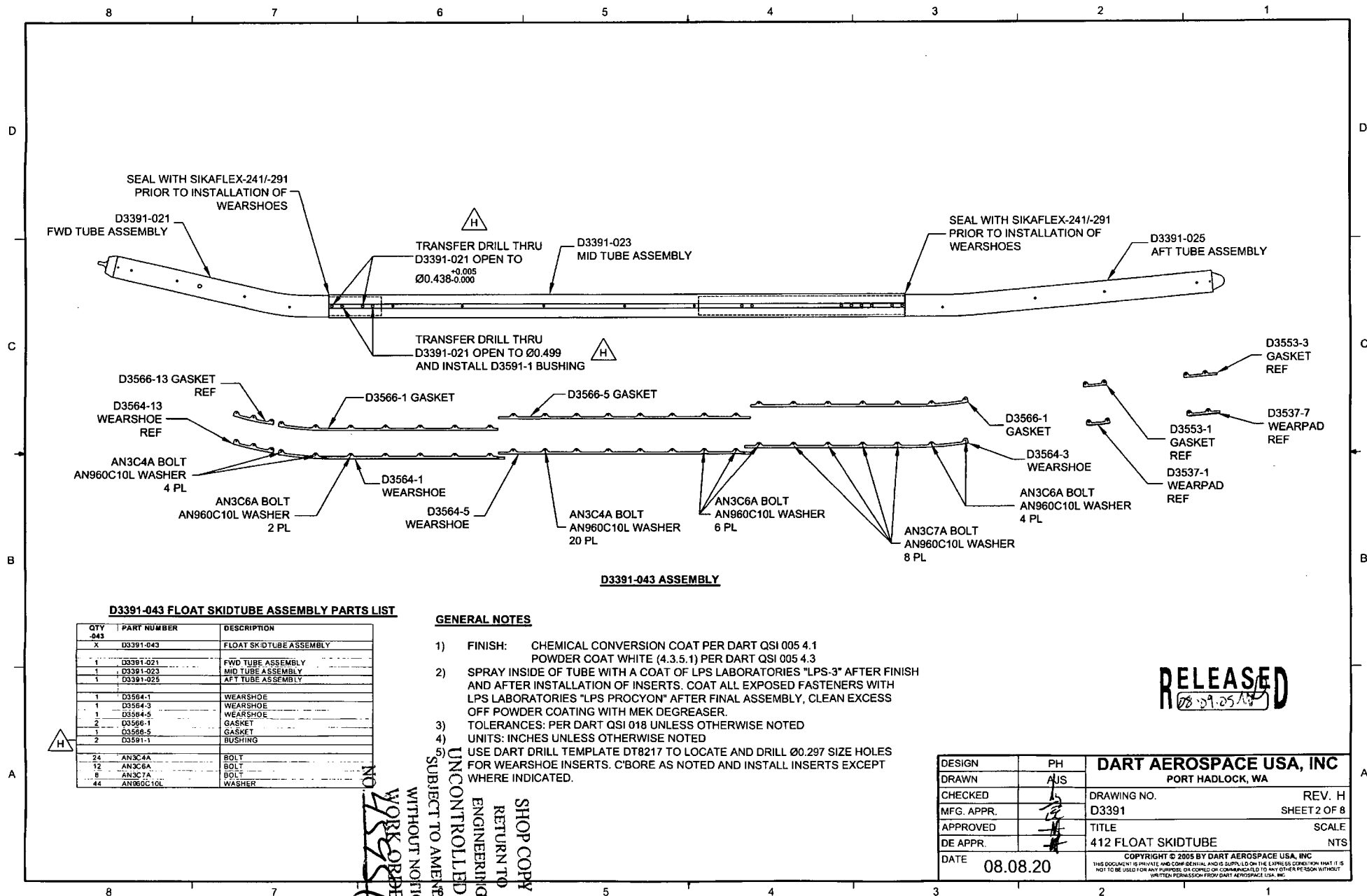
☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.687	+0.010/-0.000	0.692	✓			
3.590	+0.025/-0.010	3.597	✓			
3.300	+0.040/-0.000	3.327	✓			
1.429	+0.040/-0.060	1.432	✓			
4.250	+/-0.010	4.251	4.251 ✓			
4.250	+/-0.010	4.250	✓			

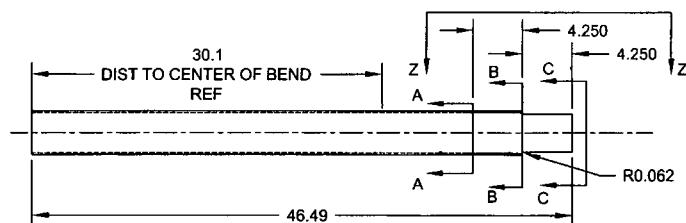
Measured by: H.A	Audited by: S	Prototype Approval:	N/A
Date: 09/02/29	Date: 09/02/29	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	06.04.27	New Issue P/O D3391-011/-021	KJ/JLM	
B	06.06.19	Tolerances revised per D3391 Rev. E	KJ/JLM	
C	07.03.21	Dimensions removed per Dwg rev. F	KJ/JLM	
D	07.11.23	Dwg Rev. updated	KJ/EC/DD	

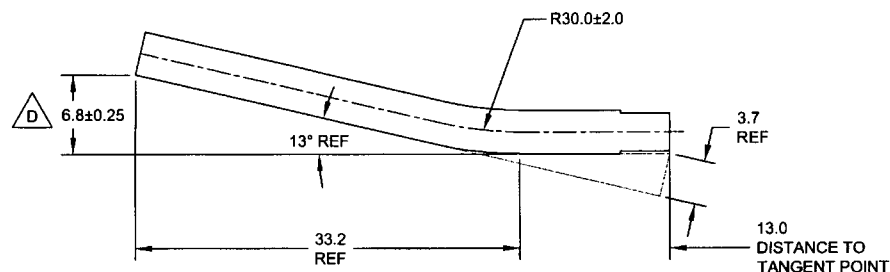




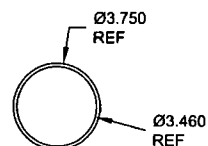
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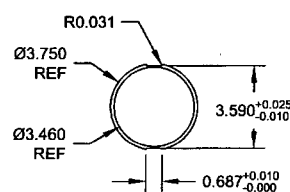
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



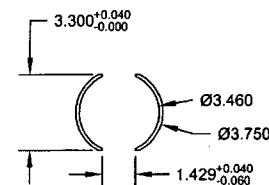
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



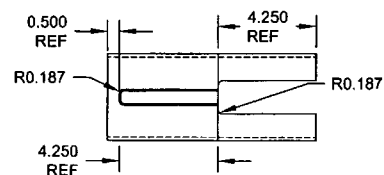
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SCALE 2X



SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X

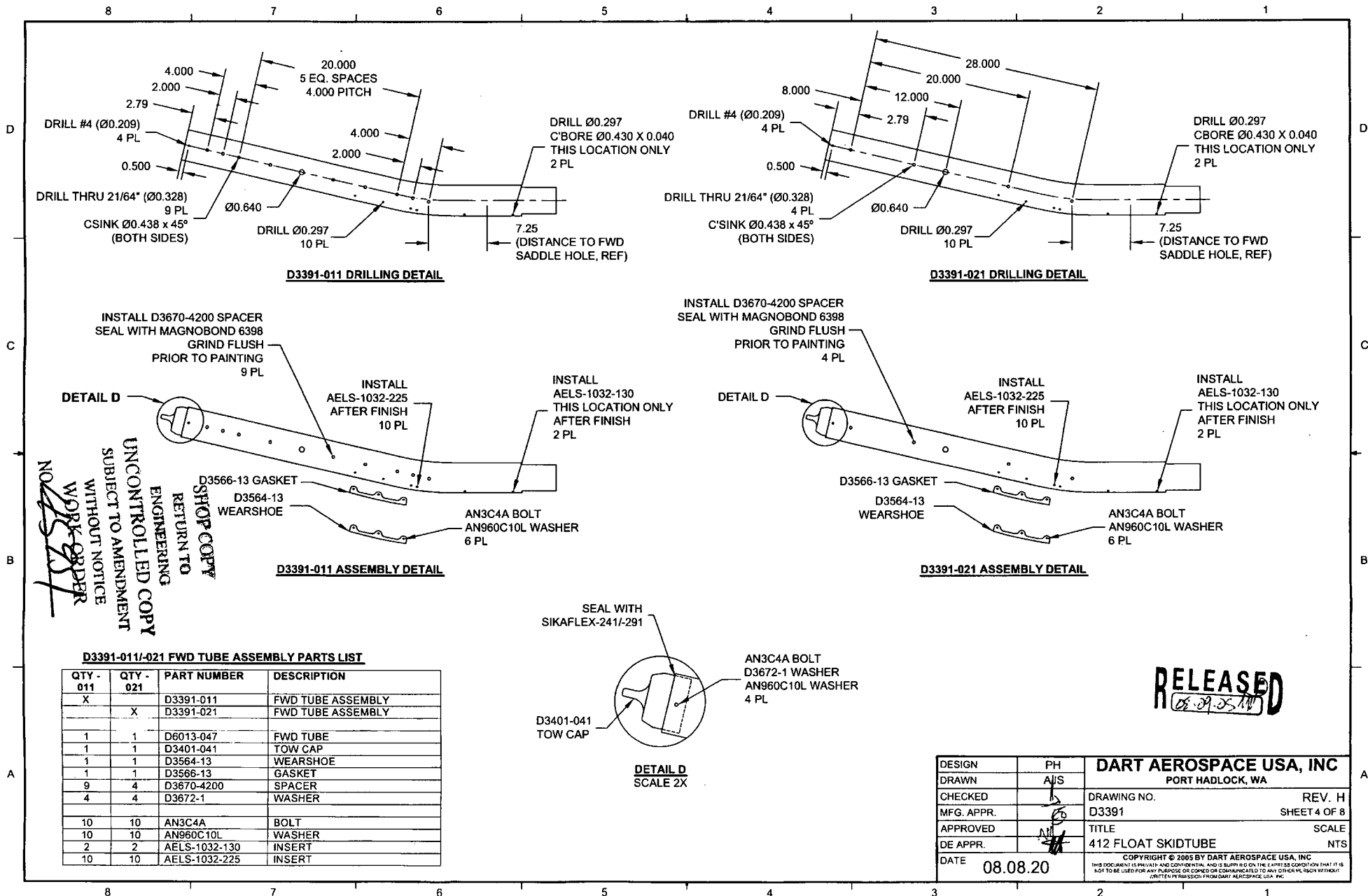


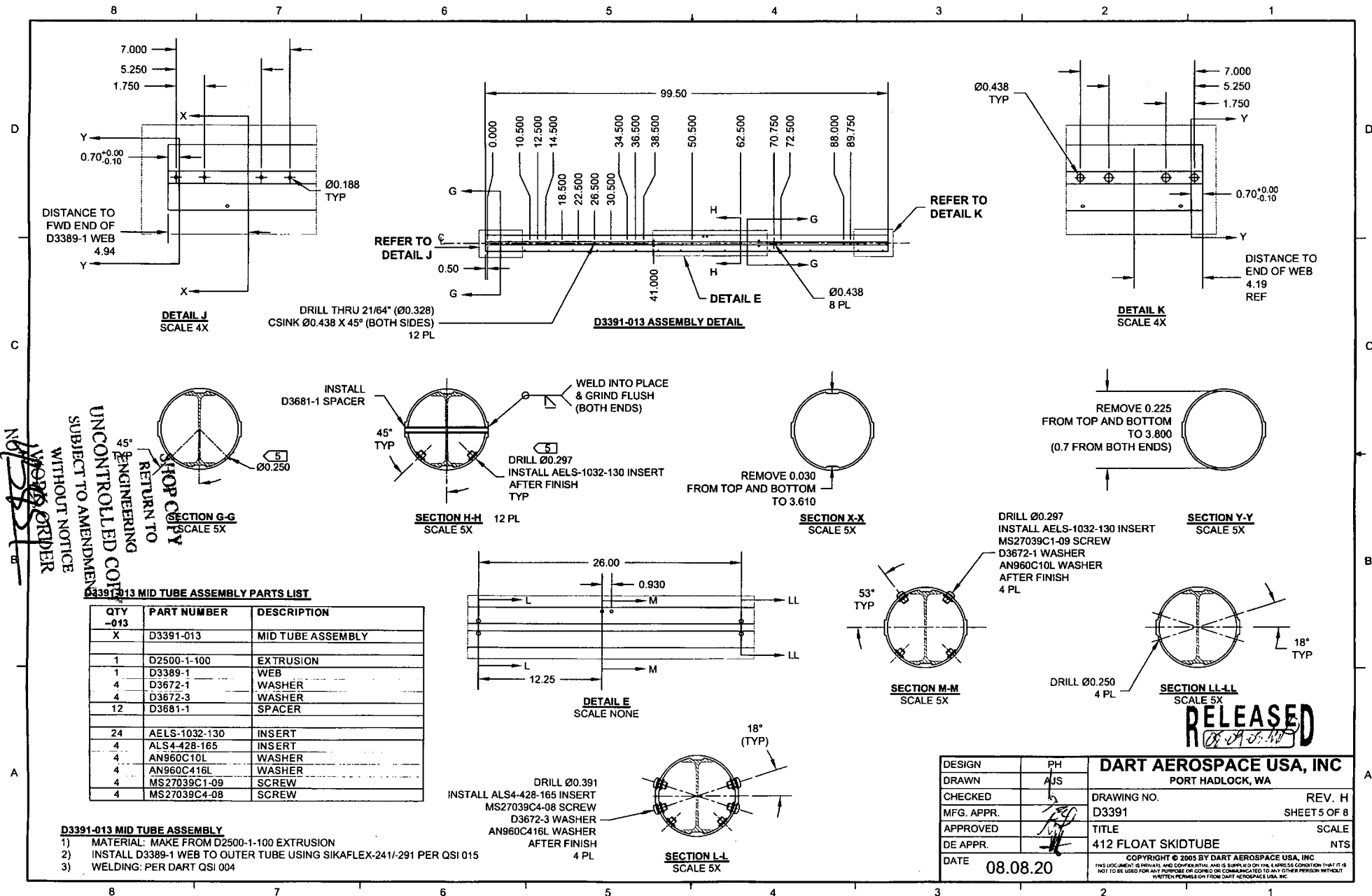
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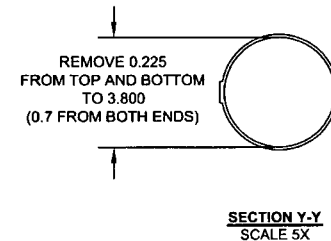
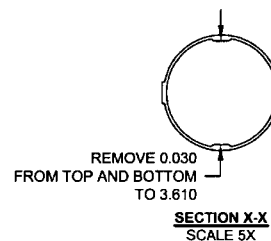
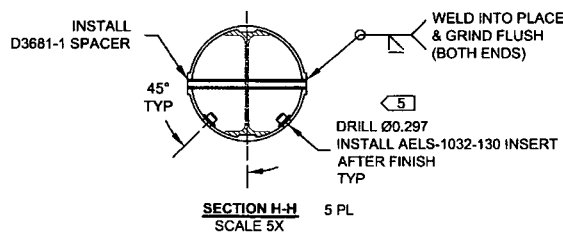
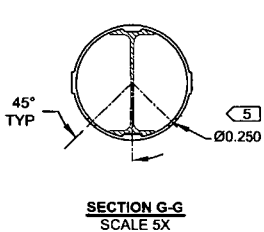
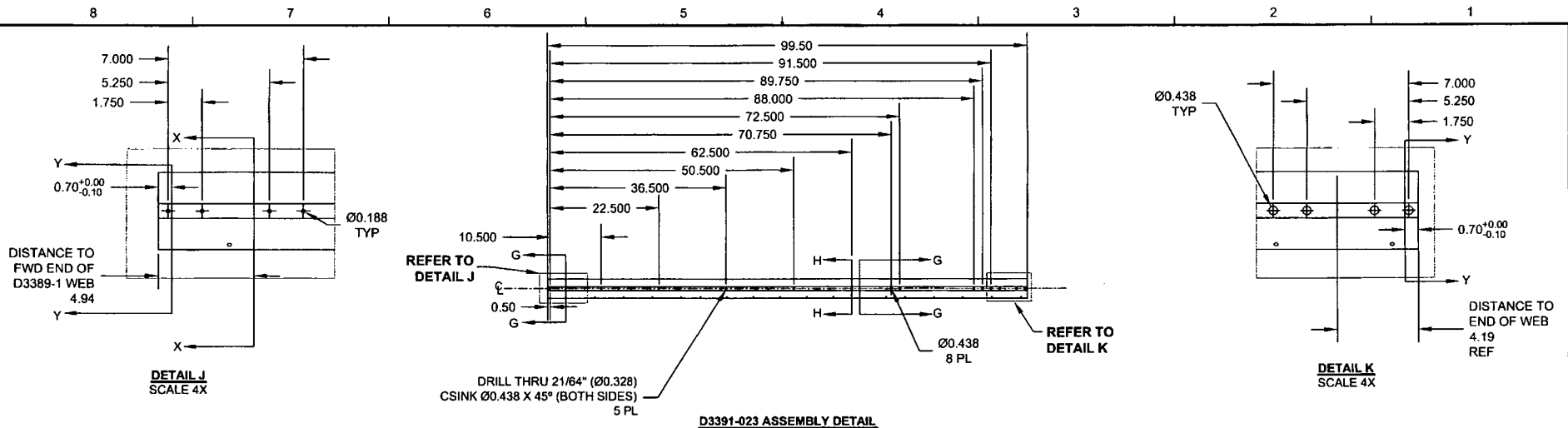
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MFG. APPR.			SHEET 3 OF 8
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DE APPR.		412 FLOAT SKIDTUBE	NTS
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D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

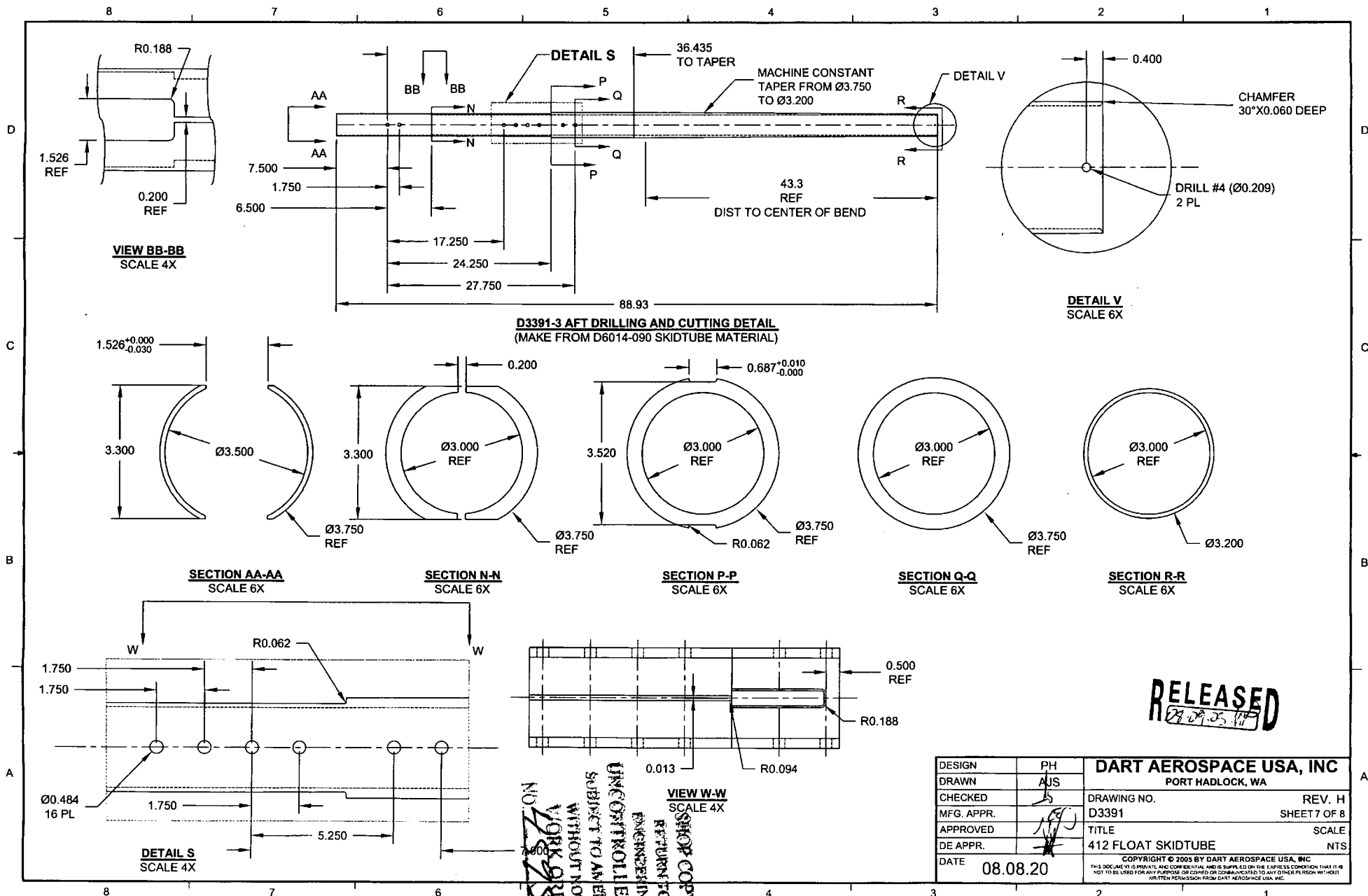
D3391-023 MID TUBE ASSEMBLY

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- 3) WELDING: PER DART QSI 004

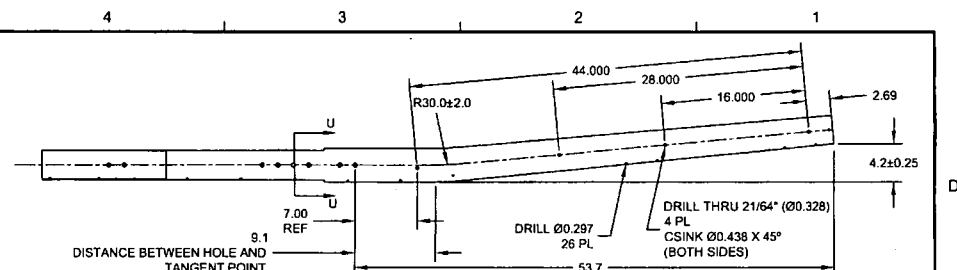
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28-09-05-17

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MFG. APPR.		SHEET 6 OF 8	
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DE APPR.		412 FLOAT SKIDTUBE	NTS
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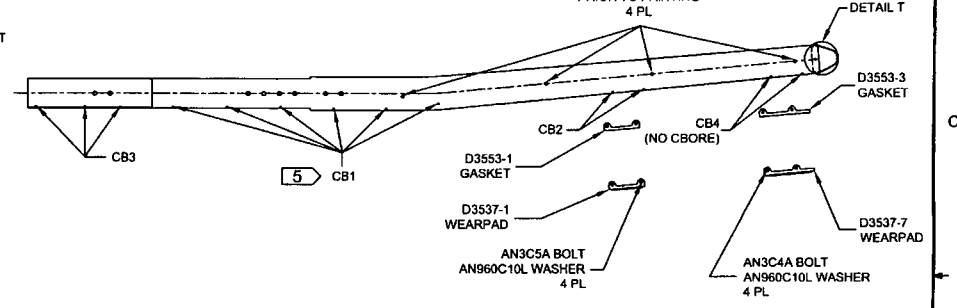


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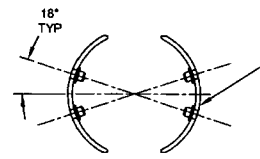
D3391-025 BENDING AND DRILLING DETAIL
(SEE CBORE DETAIL BELOW)

INSTALL D3670-4200 SPACER
SEAL WITH MAGNOBOND 6398
GRIND FLUSH
PRIOR TO PAINTING
4 PL

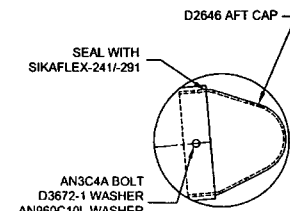


D3391-025 ASSEMBLY AND CBORE DETAIL
(SEE TABLE)

QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
		D3391-015	AFT TUBE ASSEMBLY
	X	D3391-025	AFT TUBE ASSEMBLY
1	1	D6014-090	AFT TUBE
1	1	D2846	AFT CAP
1	1	D3537-1	WEARPAD
1	1	D3537-7	WEARPAD
1	1	D3553-1	GASKET
1	1	D3553-3	GASKET
14	4	D3670-4200	SPACER
2	2	D3672-1	WASHER
14	14	AELS-1032-130	INSERT
12	12	AELS-1032-225	INSERT
4		ALS4-428-165	INSERT
6	6	AN3CA	BOLT
4	4	AN3CSA	BOLT
10	10	AN960C10L	WASHER







SECTION CC-CC
SCALE 3X



DETAIL T
SCALE 4X

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WORK ORDER
NO. 4591
6

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DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 8 OF 8
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